

REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the pending application. The Office Action dated January 5, 2010 has been received and its contents carefully reviewed.

Claim 1 is hereby amended. No new matter has been added. Claims 1-3 and 6-10 are currently pending, of which claims 8-10 are withdrawn from consideration. Reexamination and reconsideration of the pending claims are respectfully requested.

The Office Action objects to claim 1 for minor informalities. Applicants have amended claim 1 to correct the informalities. Applicants therefore respectfully request withdrawal of the objection to claim 1.

The Office Action rejects claims 1-3, 6, and 7 under 35 U.S.C. §103(a) as being obvious over U.S. Patent Application Publication No. 2001/005891 to Ko et al. (*Ko*) in view of U.S. Patent No. 6,313,185 to Leung et al. (*Leung*). Applicants respectfully traverses the rejection of claims 1-3, 6, and 7.

To establish *prima facie* obviousness of a claimed invention, all the claim elements must be taught or suggested by the prior art. The combined teaching of *Ko* and *Leung* fails to teach or suggest all the elements of claims 1-3, 6, and 7, and thus, cannot render these claims obvious.

Claim recites, “a thermally decomposable organic silane compound represented by the following Chemical Formula 1 . . . R¹_pR²_{3-p}Si-L—SiR³_qR⁴_{3-q} . . . L is polyalkyleneoxide.” *Ko* fails to teach or suggest at least this element of claim 1. The Office Action admits that “*Ko* fails to teach that the decomposable organic group may be a polyalkyleneoxide.” *Office Action*, page 4. In fact, *Ko* only discloses a silane compound having a thermally decomposable group of an oligomer or a monomer such as acrylate tetramer or isocyanurate monomer. When using the silane compound of *Ko*, the dielectric constant of the insulating film becomes higher and the mechanical properties thereof deteriorate. *Leung* does not cure the deficiency of *Ko*. *Leung* discloses that “[t]he second component, i.e., the thermally degradable component for use in the process of the invention, is preferably miscible with the first component, and can optionally form

a co-polymer therewith” and “the thermally degradable polymer according to the invention is a polyalkylene oxide.” *Leung*, column 8, lines 16-19, and column 9, lines 8-10. But *Leung* does not disclose any structures for the co-polymer of the first component and the second component (the thermally degradable polymer). In other words, *Leung* only generally discloses that the thermally degradable polymer may be formed a copolymer with the first component, but does not teach or suggest the structure of the copolymer. Claim 1 specifically requires that the polyalkyleneoxide group L be a divalent group positioned between two silicon atoms. Without the instruction information of the copolymer, one of ordinary skill in the art would not be able to arrive at the thermally decomposable organic silane compound of claim 1 based on the teaching of *Ko* and *Leung*. In addition, if the insulating film is formed from the mixture of the polyalkylene oxide and the siloxane polymer, the mixture will result in phase separation during the formation of the insulating film. Thus, the resulting insulating film shows inferior coating property and transparency.

Furthermore, the thermally decomposable organic silane compound of Chemical Formula 1 of claim 1 has a “polyalkylene oxide unit” as a thermally decomposable group, and by using the organic silane compound having the specific thermally decomposable group, the insulating film prepared by the subject invention can have a low dielectric constant less than 2.21, and show superior mechanical properties, good transparency and coating property. Also, the insulating film having pores can be formed at a low decomposition temperature of 450°C or less. These unexpected results further establish that it would not been obvious to one of ordinary skill in the art to combine the teaching of *Ko* and *Leung* to arrive at the thermally decomposable organic silane compound of claim 1

Accordingly, claim 1 is patentable over the combined teaching of *Ko* and *Leung*. Claims 2, 3, 6, and 7 variously depend from claim 1, and thus, are also patentable for at least the same reasons as claim 1. Applicants, therefore, respectfully request withdrawal of the 35 U.S.C. §103(a) rejection of claims 1-3, 6, and 7.

The Office Action rejects claims 1-3, 6, and 7 under 35 U.S.C. §103(a) as being obvious over U.S. Patent Application Publication No. 2001/005891 to *Ko* et al. (*Ko*) in view of U.S. Patent Application Publication No. 2005/0173803 to *Lu* et al. (*Lu*). Applicants respectfully traverses the rejection of claims 1-3, 6, and 7.

Claim recites, “a thermally decomposable organic silane compound represented by the following Chemical Formula 1 . . . R¹_pR²_{3-p}Si-L—SiR³_qR⁴_{3-q} . . . L is polyalkyleneoxide.” *Ko* fails to teach or suggest at least this element of claim 1. The Office Action admits that “*Ko* fails to teach that the decomposable organic group may be a polyalkyleneoxide.” *Office Action*, page 7. *Lu* does not cure the deficiency of *Ko*. *Lu* discloses that “[t]he composition then contains at least one porogen” and “a suitable polymer porogen for use in the compositions and methods of the invention is, e.g., a polyalkylene oxide.” *Lu*, ¶¶0056, 0059. In the Examples Section, *Lu* discloses that polyethylene glycol monomethylether was added as a porogen to a reaction mixture of crude polyethylene glycol monomethyl ether. *Lu*, ¶0099. In other words, *Lu* only discloses that the mixing of two different components together, i.e., the composition and the porogen, and does not disclose or suggest any structures that, when viewed in combination with *Ko*, would render Chemical Formula 1 of claim 1 obvious.

Accordingly, claim 1 is patentable over the combined teaching of *Ko* and *Lu*. Claims 2, 3, 6, and 7 variously depend from claim 1, and thus, are also patentable for at least the same reasons as claim 1. Applicants, therefore, respectfully request withdrawal of the 35 U.S.C. §103(a) rejection of claims 1-3, 6, and 7.

The application is in condition for allowance and early, favorable action is respectfully solicited. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911.

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